

United States Patent Number 4,673,382 issued to Buck et al. in view of United States Patent Number 4,676,113 issued to Bond.

Claim 1 calls for:

A separation finger apparatus for removable insertion into a stream of web material, comprising:

a separation finger;

a translation member mounted for rotation about a first axis, the translation member being coupled to the separation finger and in translating engagement therewith, the translation member having a length along which the separation finger can translate;

a pivot member rotatably coupled to the separation finger for rotation about a second axis, the translation member and the pivot member being rotatable with respect to one another to simultaneously translate and rotate the separation finger in a range of positions upon the length of the translation member between and including a retracted position and an extended position with respect to the stream of web material. (Underlining added for emphasis).

By way of example only, the separation finger in the first illustrated preferred embodiment is the elongated finger 12, the translation member is the pair of translation shafts 14 upon which the elongated finger 12 can move (i.e., "in translating engagement therewith, the translation member having a length along which the separation finger can translate" as claimed in claim 1), and the pivot member is the pivot arm 20. As is more fully described in the present application, these elements can take other shapes and forms while still operating in the manner claimed above.

In the rejection of claim 1, the Examiner compares the claimed separation finger to the dividing member 22 of Buck et al. and the arm 48 of Bond. In addition, the Examiner compares the claimed translation member to the rods 73, 75 (in sliding guides 74) of Buck et al. and the

cam plate 26 of Bond. Also in this rejection, the Examiner compares the claimed pivot member to the levers 77, 78 of Buck et al. and the shaft 52 of Bond.

In contrast to the separation finger claimed in claim 1, neither the dividing member 22 of Buck et al. nor the arm 48 of Bond "simultaneously translate[s] and rotate[s] in a range of positions". Specifically, the dividing member 22 of Buck et al. first rotates into the stack building area, then translates out of the stack building area, then rotates to an upwardly directed position, and then translates back toward the stack building area. This motion is described in column 5, lines 44-57 of the Buck et al. reference. The dividing member of Buck et al. therefore does not "simultaneously translate and rotate" as claimed in claim 1. Furthermore, none of the advantages (described in detail on page 5, lines 8-23 of the originally-filed application) offered by simultaneously translating and rotating a separation finger are suggested in Buck et al., and so no motivation exists for modifying the Buck et al. device to operate in this manner.

Similarly, the arm of Bond does not "simultaneously translate and rotate" as claimed in claim 1. On pages 3 and 6 of the Office Action, the Examiner states that Bond discloses a separation finger which is simultaneously translatable and rotatable, and notes that pivot member 52 upon which the separation finger is mounted moves to permit this simultaneous translation and rotation. The Applicant respectfully submits that the Bond device does not operate in this manner described by the Examiner. In particular, the pivot member 52 of the Bond device is fixed in place with respect to the arm 48, cam plate 26, base 10, and the rest of the Bond device.

The pivot member 52 of Bond is "mounted upon the base 10" (column 2, lines 10-11 of Bond) and does not translate at all. With particular reference to the left hand side of FIG. 2 of Bond, it is clear that pivot member 52 (not numbered in FIG. 2) is mounted within a boss (also not numbered) extending from the base 10. Also with reference to FIG. 3 of Bond, the two positions of arm 54 show that pivot 52 remains in place with respect to the other elements of the Bond device. Indeed, Bond fails to indicate whether the pivot member 52 even rotates. In this regard, note that the Bond device operates as described with the arms 48, 54 pivoting about a stationary pivot member 52. Because the pivot member 52 does not move from its position mounted to the base, the arm 48 of the Bond device only pivots in place and does not "simultaneously translate and rotate" as claimed in claim 1. As with the Buck et al. device, none

of the advantages offered by simultaneously translating and rotating a separation finger are even suggested in Bond, and so no motivation exists for modifying the Bond device to operate in this manner.

Because neither Buck et al., Bond, nor their combination teaches, describes or suggests a separation finger which "simultaneously translate[s] and rotate[s] . . . in a range of positions" as claimed in claim 1, the Applicant respectfully submits that claim 1 is novel and patentable over Buck et al., Bond, and the other prior art. In addition, the Applicant wishes to note that the rods 73, 75 of the Buck et al. device (compared by the Examiner to the translation member of claim 1) are not "mounted for rotation about a first axis" as described on pages 2 and 5 of the Office Action. The Examiner has compared the rotatable cam plate 26 of Bond to the translation member of claim 1. Even though the cam plate 26 of Bond is rotatable about an axis (at pivot means 30), the Examiner has provided no indication of how Buck et al. could be modified to incorporate a rotating cam plate as taught by Bond or how the rods 73, 75 of Buck et al. could be made rotatable in order to render claim 1 obvious. There is no teaching or suggestion in either reference regarding how this could be done or why this change to the Buck et al. device would be desirable.

If the rods 73, 75 of Buck et al. were removed from their sliding guides 74 and were instead somehow made pivotable, there is no indication that the resulting device would work. Would levers 77, 78 still be used? If so, how would motion of the rods 73, 74 be controlled? If not, how would motion be transferred to the rods 73, 74 to generate simultaneous translation or rotation of the dividing member 22 as claimed? If the Examiner instead suggests the use of a cam plate (such as that used in the Bond device) in the Buck et al. device, the same questions just raised would need to be answered. Also, would dividing member 22 be secured to rotate in place as suggested by Bond? If not, how would motion of the dividing member 22 be controlled as the proposed cam plate is rotated? These and other important questions illustrate that the application of Bond to the Buck et al. device require more than just the replacement or re-mounting of certain elements such as the rods 73, 74 in the Buck et al. device. Such an application requires numerous major changes to the Buck et al. device resulting in a completely different machine - with no indication that the machine would even work. In addition to the reasons set forth above,

the Applicant therefore respectfully submits that claim 1 is novel and patentable over Buck et al., Bond, their combination, and the other prior art.

Claim 13 calls for:

A separation finger apparatus for moving a separation finger toward and away from a stream of web material, the separation finger apparatus, comprising:

a pivot axis;

an orbit axis located a distance from the pivot axis;

a separation finger having

an extended position; and

a retracted position,

the separation finger pivotably mounted about the pivot axis, the separation finger also mounted to orbit about the orbit axis to move the separation finger through an arc between its extended and retracted positions. (Underlining added for emphasis).

In the rejection of claim 13, the Examiner has applied the same correspondence of elements as described above with reference to claim 1. In addition, the Examiner compares the claimed pivot axis to the axis about which the dividing member 22 rotates in the Buck et al. device (at the connection point between the dividing member 22 and the arm 73) and to the axis of the shaft 52 about which the arms 48, 54 rotate in the Bond device. Also, the Examiner compares the claimed orbit axis to the pivotable connection between connecting rod 79 and double lever 80 in the Buck et al. device.

The dividing member 22 of the Buck et al. device rotates about its connection point to rod 73 (see for example FIGS. 1-5 and column 4, lines 25-29 of Buck et al.), but does not orbit about an orbit axis as claimed in claim 13. Other than the dividing member's ability to rotate in place, the dividing member merely slides in a straight path through the stationary sliding guides 74 of the Buck et al. device. The dividing member 22 is therefore incapable of orbital motion. To orbit means to "revolve in an orbit around", wherein the term "revolve" means "to move in a curved path round a center or axis" and the term "orbit" (as a noun) means "a path described by one body in its revolution about another". (Merriam Webster's Collegiate Dictionary, Tenth

Edition, pages 817, 818, and 1004, © 1997). As just discussed, this does not describe the motion of the dividing member 22, which either rotates in place or slides in a straight path.

As described in greater detail with reference to claim 1 above, it is clear that the arm 48 of the Bond device only rotates in place about shaft 52, and therefore is also incapable of orbital movement. Therefore, neither Buck et al, Bond, nor their combination teaches, describes, or suggests a separation finger "pivotably mounted about the pivot axis . . . and mounted to orbit about the orbit axis" as claimed in claim 13.

Because the dividing member 22 of the Buck et al. device either rotates in place or slides in a straight path in sliding guides 74, the dividing member 22 is also not movable "through an arc between its extended and retracted positions" as claimed in claim 13. In addition, because the arm 48 of the Bond device is rotatable only about a fixed axis defined by shaft 52, the arm 48 is also not movable "through an arc between its extended and retracted positions" as claimed in claim 13. Therefore, the Applicant respectfully submits that claim 13 is novel and patentable over the Buck et al. and Bond references, taken individually or in combination.

Neither Buck et al. nor Bond provide any suggestion or motivation to alter their devices so that the dividing member 22 or arm 48 (respectively) is movable as claimed in claim 13. In this regard, the cam plate 26, arms 48, 56, pivot 52, and connected elements of Bond are employed in the Bond device to "provide the driven member with a dwell as the piston rod is either extended or retracted". Therefore, even if the combined teachings of Buck et al. and Bond would suggest an operable device (and as described above, the Applicant respectfully submits that such a conclusion cannot reasonably be reached), one having ordinary skill in the art would only be motivated to apply Bond to the Buck et al. device to give the dividing member of the Buck et al. device dwell time as it moves - not for the entirely different result of moving the dividing member through an arc as claimed. Accordingly, and in addition to the reasons discussed above, the Applicant respectfully submits that claim 13 is novel and patentable over Buck et al., Bond, and their combined teachings.

Claim 23 calls for:

A separation finger apparatus for moving a separation finger toward and away from a stream of web product, the separation finger apparatus comprising:

a separation finger, the separation finger having

an extended position in which the separation finger is extended into the stream of web product; and

a retracted position in which the separation finger is retracted from the stream of web product;

wherein the separation finger is mounted for simultaneous translation and rotation between the extended and retracted positions. (Underlining added for emphasis).

In the rejection of claim 23, the Examiner has applied the same correspondence of elements as described above with reference to claim 1.

Like claim 13, claim 23 calls for the separation finger to be mounted for simultaneous translation and rotation between its extended and retracted positions. The remarks presented above with regard to simultaneous translation and rotation of the separation finger of the present invention apply equally to claim 23. The Examiner's attention is therefore directed to the above remarks for a more detailed response to this rejection. In short, and in contrast to the separation finger claimed in claim 23, neither the dividing member 22 of the Buck et al. device nor the arm 48 of the Bond et al. device moves with "simultaneous translation and rotation between . . . extended and retracted positions" as claimed in claim 23. Also, none of the advantages offered by simultaneously translating and rotating a separation finger are taught or even suggested in Buck et al. or Bond, and so no motivation exists for modifying either device to operate in such a manner. Accordingly, the Applicant respectfully submits that claim 23 is novel and patentable over Buck et al, Bond, and their combined teachings.

In view of the above remarks it is submitted that the claims are patentably distinct over the prior art, that all the rejections to the claims have been overcome, and that the application is in condition for allowance. Allowance of the present application is therefore respectfully requested.

Respectfully submitted,

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